

REMARKS

I. Status of the claims

Claims 1 and 2 are pending in this application. Claim 1 has been amended to recite a recording liquid for ink printers that comprises colorants, water, and fine particle of non-photo-curable resins and photo-curable resin, wherein the total solids content of the resin particles ranges from 20 to 80% by weight. Support for this amendment may be found on page 14, lines 16-23 of the specification.

II. Rejection under 35 U.S.C. § 103(a)

The Examiner has rejected claims 1 and 2 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,234,601 ("Hayashi") in view of U.S. Patent No. 5,968,244 ("Ueda"). The Examiner states that, with respect to claim 1, Hayashi discloses (a) a colorant; (b) water; (c) a fine particle of non-photo-curable resin; and (d) a fine particle of photo-curable resin. With respect to claim 2, the Examiner states that Hayashi discloses a method for recording images on a recording medium by discharging the droplets of the recording liquid from a recording head.

The Examiner concedes that Hayashi does not teach the total solids content of the resin particles ranging from 15 to 90% by weight. However, the Examiner cites Ueda as teaching a composition wherein the total solids content of the resin particles range from 1 to 20% by weight. The Examiner finds motivation to combine these references in Ueda, which, according to the Examiner, teaches that ink compositions having such contents show excellent glossiness and fixing characteristics. Applicant respectfully traverses this rejection.

As amended, Applicant's claimed invention relates to a recording liquid for ink printers that contains colorants, water, and fine particles of non-photo-curable resins and photo-curable resins, wherein the total solids content of the resin particles ranges from 20 to 80% by weight.

In contrast, Ueda teaches that the polyethyleneimine (PEI) in its disclosed ink composition only ranges from 1-20 wt %. Importantly, Ueda teaches that when the contents exceed 20 wt %, the viscosity becomes excessive so as to produce undesirable characteristics in the ink composition. See col. 4, lines 22-29. Clearly, in view of this passage, one skilled in the art would not use more than 20 wt % PEI in the Ueda ink composition. Applicant submits that Ueda teaches away from the invention now claimed. None of the other components disclosed in the Ueda ink composition are resin particles, so the PEI content represents the total solids content of the resin particles in the

Ueda ink composition. Therefore, in view of the Ueda disclosure, one skilled in the art would not produce a Ueda ink composition wherein the total solids content of resins particles is more than 20% by weight.

Furthermore, Ueda emphasizes that PEI is used because of its chelating action and antibacterial action (col. 4, lines 2-4), not its total solids content. In fact, neither Ueda nor Hayashi teach or suggest that increasing the total solids content of the resin particles in their disclosed compositions would result an improved recording liquid. Without such a teaching or suggestion, one skilled in the art would have no motivation to make an improved recording medium by increasing the solids content of the resin particles beyond the disclosed levels. This is especially true here when the art teaches that increasing the solids content of the resin particles beyond the disclosed upper limit of 20% wt% produces undesirable effects. See Ueda, col. 4, lines 24-29.

Since Hayashi in view of Ueda does not teach a recording liquid wherein the total solids content of the resin particles ranges from 20 to 80% by weight, Hayashi in view of Ueda does not teach or suggest Applicant's claimed invention. Accordingly, Applicant respectfully requests that the Examiner withdraw this § 103(a) rejection.

III. Karkov

In this Office Action the Examiner additionally comments that U.S. Patent No. 3,925,096 ("Karkov") is not relied upon but is considered pertinent to Applicant's disclosure. The Examiner states that Karkov discloses the pigment contents amount to 70% or more of the total weight of resin and pigment. The Examiner cites col. 5, lines 45-50 to support this statement.

For clarification, Karkov teaches pigment preparations which consist of pigments and resin particles. The pigment content in the pigment preparations amount to 70% or more of the total weight of resin and pigment. See col. 5, lines 45-57.

But Karkov does not teach the solids content of the resin particles in the pigment preparations, or even that controlling the solids content of the resins particles would be desirable. Instead, when discussing the resins, Karkov concentrates on the solubility of the resins, and how the resins interact with the organic solvent. See col. 2, lines 34-44. Clearly then, Karkov does not teach or suggest that the total solids content of the resin particles in the pigment preparation should range from 20 to 80% by weight.

Since Karkov does not teach or suggest a pigment preparation wherein the total solids content of the resin particles ranges from 20 to 80% by weight, and the only resins disclosed in Karkov appear to be in the pigment preparation, Karkov does not teach or suggest a recording liquid for ink printers wherein the total solids content of resin particles ranges from 20 to 80% by weight. Karkov is therefore distinguishable from Applicant's claimed invention, either taken by itself or combined with any other reference cited by the Examiner.

IV. Conclusion

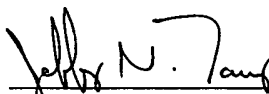
Applicant respectfully requests reconsideration of the subject application in view of the above amendment and remarks.

Attached hereto is a marked-up version of the changes made to the claim by the current amendment. The attached page is captioned "Version with markings to show changes made."

Except for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0310.

Respectfully Submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (twice amended) A recording liquid for ink printers, comprising: colorants, water, and fine particles of non-photo-curable resins and photo-curable resins, wherein the total solids content of the resin particles ranges from 20 to 80% [15 to 90%] by weight.